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The U.S. Government's Global Hunger & Food Security Initiative



USAID Feed the Future Innovation Lab: Global Research in Sustainable Intensification

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USAID
FROM THE AMERICAN PEOPLE



KANSAS STATE
UNIVERSITY



Presentation Outline

- USAID Feed the Future Program and Innovation Labs
- Sustainable Intensification (SI) definition and linkages
- Vision, Objectives and Areas of Inquiries
- Overview of Management Entity
- Funded Consortia and Current Research Projects
- Global Networking and Linkages
- Quantifying Progress and Measuring Impacts
- Discussion and Questions



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Feed the Future Program

Sustainably Reduce Global Poverty & Hunger

INDICATORS:

Prevalence of poverty &
Prevalence of underweight & stunted children

OBJECTIVE

INCLUSIVE AGRICULTURE SECTOR GROWTH

OBJECTIVE

IMPROVED NUTRITIONAL STATUS
(WOMEN & CHILDREN)

- Brings together 11 U.S. agencies (with **USAID** as lead agency)
- Host country-led priorities
- Focused on smallholder farmers
- Includes research, capacity building and developmental activities










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FtF Prioritizes Research and Innovation in 5 Point Plan

1.  **BIG IDEAS**
 1. Climate Resilience of Cereals (Heat, Drought, Salinity)
 2. Enhancing Disease Resistance (Plants and Animals)
 3. Increasing Productivity of Legume (Pulses)
2.  **SUSTAINABLE INTENSIFICATION**

Farming Systems / Participatory Approach

 1. Soil Health
 2. Water Use
 3. Diversification
 4. Climate Impacts
 5. Benefits to Women
3.  **NUTRITION**
 1. Better Nutritious Food
 2. Healthy and Diversified Diets
4.  **POLICY**
 1. Enabling Environment
 2. Building Markets
 3. Private Sector Engagement
5.  **CAPACITY BUILDING**
 1. Human Capacity
 2. Institutional Capacity
 3. Knowledge Sharing / Communication



Feed the Future Innovation Labs (24)

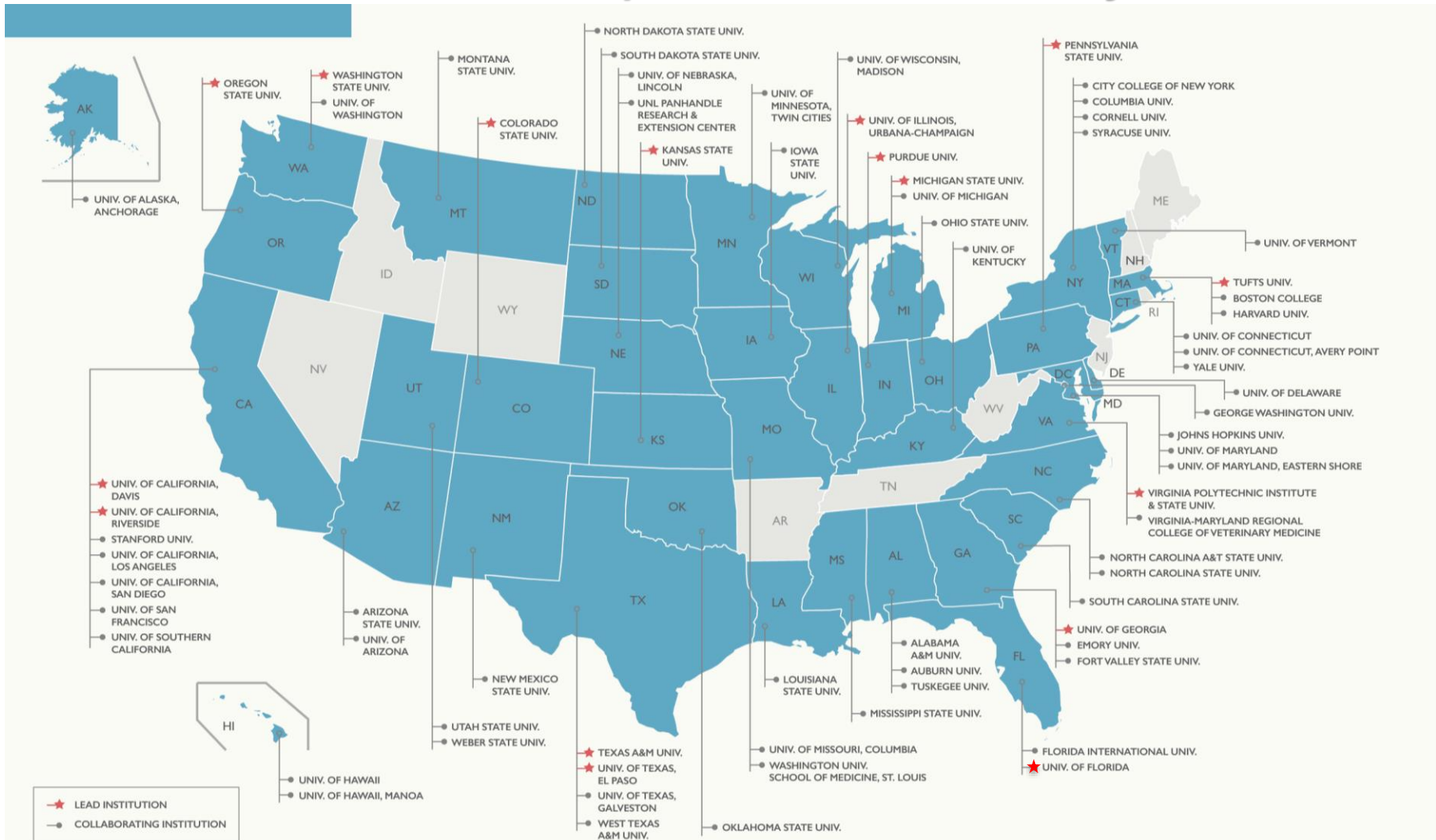
1. Sustainable Intensification (K-State)
2. Sorghum and Millet (K-State)
3. Peanut and Mycotoxin Control (UGA)
4. Grain Legumes (MSU)
5. Horticulture (UC-Davis)
6. Livestock Systems (UF)
7. Aquaculture and Fisheries (OSU)
8. Integrated Pest Management (V-Tech)
9. Nutrition (Tufts U)
10. Assets and Market Access (UC-Davis)
11. Reduction in Post Harvest Loss (K-State)
12. Food Processing & Post Harvest Handling (Purdue)
13. Climate-Resilient Wheat (WSU)
14. Climate-Resilient Sorghum (UGA)
15. Climate-Resilient Millet (UC-Davis)
16. Climate-Resilient Chickpea (UC-Davis)
17. Climate-Resilient Beans (Penn State)
18. Climate-Resilient Cowpea (UC-Riverside)
19. Applied Wheat Genomics (K-State)
20. Genomics to Improve Poultry (UC-Davis)
21. Rift Valley Fever Control (UT-El Paso)
22. Soybean Value Chain (UI)
23. Small Scale Irrigation (TAMU)
24. Food Security Policy (MSU)



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Network of > 70 U.S. Universities working in collaboration with national and international partners on host-country research





What is Sustainable Intensification ?

- Increasing food production from existing farmland while minimizing negative impacts on environment.
- Sustainable intensification practices optimizes the production of farming systems per unit area per unit time.
- The combination of terms “sustainable” and “intensification” indicates that desirable outcomes around both more food and improved environmental goods and services can be achieved simultaneously and by multiple means using systems approach.





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Focus on Smallholder Farmers

- Globally 70% of farmers are smallholders (<1 ha).
- Smallholders manage >80% of 500 million farms.
- Smallholders produce 80% of the food consumed.
- Smallholders are key to sustainable food systems.
- In Africa & Asia >50% of smallholders are food insecure and undernourished.
- Transformation of smallholders is required for global food and nutritional security.





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SIIL: Vision

Vision of the SIIL is to become global leader in interdisciplinary research, knowledge sharing and capacity building on sustainable intensification producing measurable impacts on improving farm productivity, income and nutrition of smallholder farmers.





SIIL: Objectives

- **Objective 1:** Use geospatial tools to identify needs, opportunities for intervention, scaling and to assess impact.
- **Objective 2:** Improve production and nutrition using integrated and environmentally sustainable interventions (technologies).
- **Objective 3:** Identify enabling conditions, social networks and support systems to enhance sustainable intensification.
- **Objective 4:** Develop holistic platforms for communication, knowledge sharing and capacity building of all stakeholders.

Our interventions are based on host country priorities.



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SIIL: Focus Countries





SIIL: Areas of Inquiries

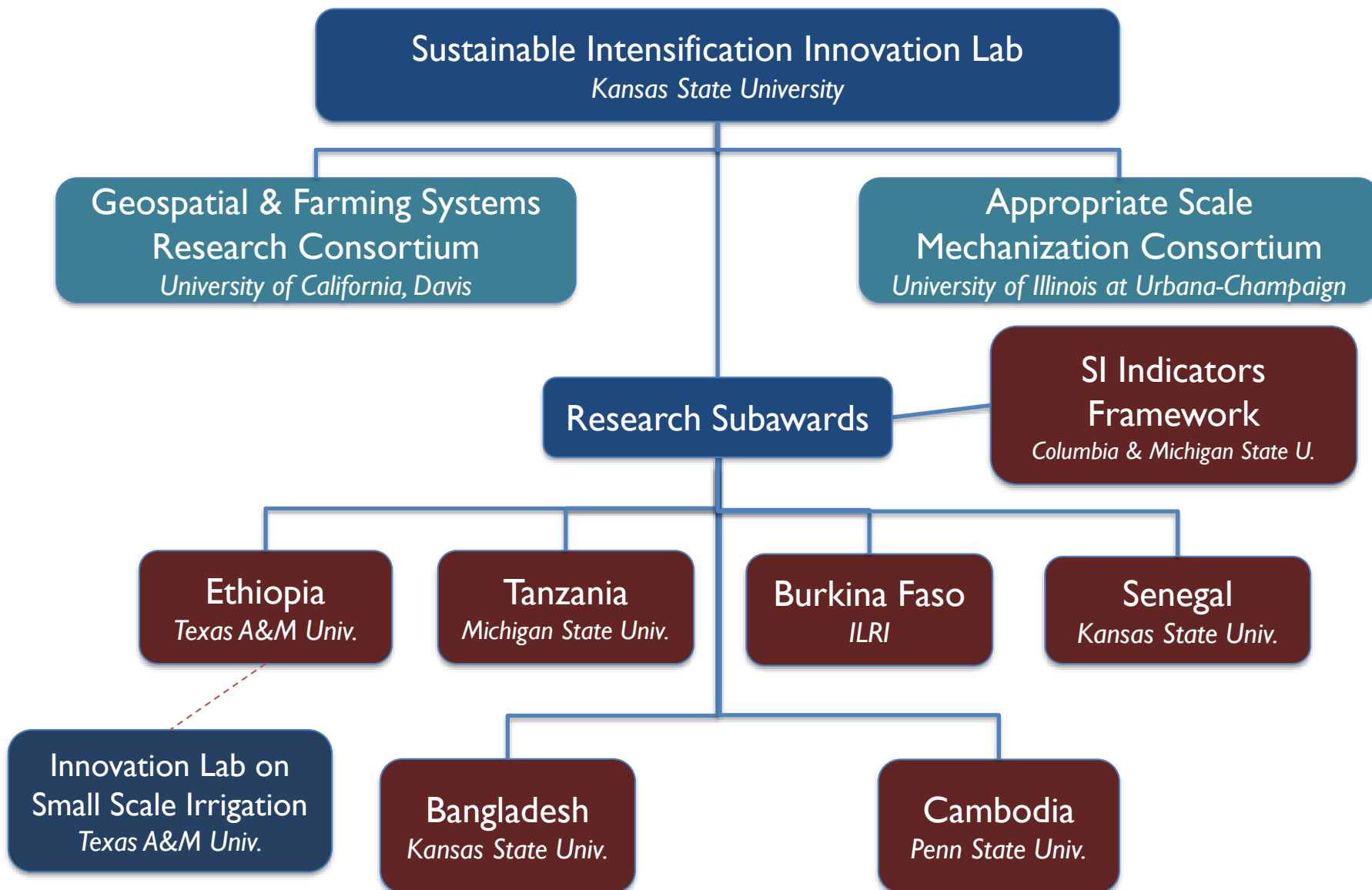
- Stocktaking, mapping, and guidance on SI.
- Farming Systems Research:
 - ✓ *Integrated crop and livestock systems.*
 - ✓ *Sustainable and efficient use of land, soil, nutrient and water management systems.*
 - ✓ *Climate-smart and resilient farming systems.*
 - ✓ *Increasing biodiversity.*
- Linking SI impacts at multiple scales (farms to landscapes).
- Impact of SI practices on gender and nutrition.





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SIIL: Management Entity – Overview



Vara Prasad
(Program Director)



Jan Middendorf
(Associate Director)



Manny Reyes
(Research Professor)



Jessie Vipham
(Assistant Professor)



Zach Stewart
(Research Associate)



**Molly
McKnight**
(Program
Coordinator)



Katy Bach
(Business Manager)



**Jovin
Lwehabura**
(CIAT – Tanzania
Coordinator)



Alioune Faye
(ISRA – Senegal
Coordinator)



Hamidou Traore
(INERA –
Burkina Faso
Initial Contact)



Parul Sarker
(CIMMYT –
Bangladesh
Coordinator)



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Geospatial & Farming Systems Research Consortium

Lead: University of California Davis



Robert Hijmans
(Leader and Professor)



Alex Mandel
(Programmer)



Ani Ghosh
(Scientist)

Engages with several national and international organizations; and sub-awards to meet the objectives and contribute to overall vision of SIIL.



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Appropriate Scale Mechanization Consortium

Lead: University of Illinois – Urbana Champaign



Alan Hansen (Leader)



K.C. Ting



Prasanta Kalita



Alex Winter-Nelson



Tim Rendall
Project Manager



Ajit Srivastava
(Michigan State Univ.)



Manny Reyes
(K-State)



Carlos Campabadal
(K-State)



Ben Schwab
(K-State)



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Research Projects: SI Indicators Framework

Lead: Michigan State University and University of Columbia



Sieg Snapp
Lead PI
(Michigan State Univ.)



Philip Grabowski
(Michigan State Univ.)



Cheryl Palm
Lead PI
(Columbia Univ.)



Mark Musumba
(Columbia Univ.)



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Research Projects: West Africa



Doohong Min

Senegal: Kansas State University

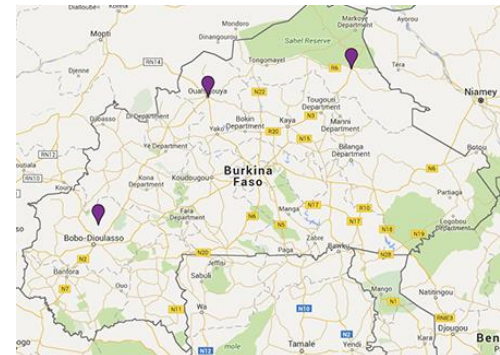
Adoption of Sustainable Intensification of Dual-Purpose Millet – Leguminous Crops – Livestock Systems to Improve Food and Nutritional Security and Natural Resource Management of Rural Smallholder Farmers in Senegal.



Augustine
Ayantunde

Burkina Faso: International Livestock Research Institute

Sustainable Intensification through Better Integration of Crop and Livestock Systems for Improved Food Security and Environmental Benefits in Sahel Zone of Burkina Faso.





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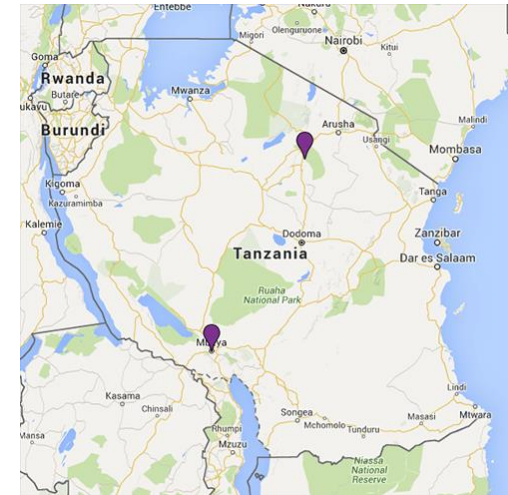
Research Projects: East Africa



Sieg Snapp

Tanzania: Michigan State University

Raising Crop Response: Bidirectional Learning to Catalyze Sustainable Intensification at Multiple Scales.



Neville Clark

Ethiopia: Texas A and M University

Evaluation of Relationships Between Sustainably Intensified Production Systems and Impact on Nutrition (SIPS-IN).





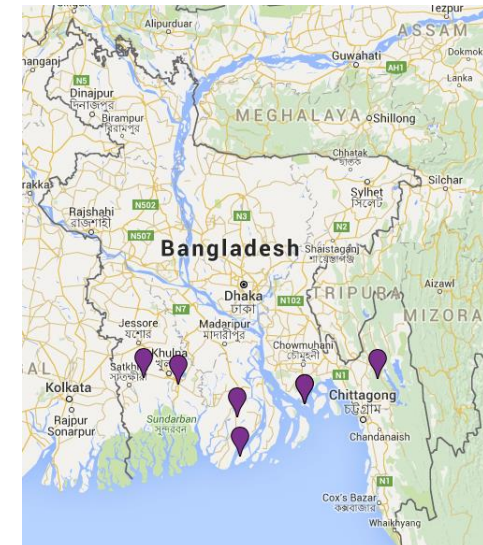
Research Projects: Asia



Rick Bates



Krishna Jagadish





SIIL: Host Country Priorities and Global Network and Linkages

- Projects were thoroughly vetted by external advisory board, outside reviewers and USAID Missions.
- Covers multiple objectives and areas of inquiries of SIIL.
- Works on host-country priorities, value chains and zones of influence.
- Strong collaboration with host-country partners and organizations.
- Links with active research partners on SI and provides synergy.
- Active participation of >100 scientists and >40 organizations (includes 10 U.S. universities; 9 local universities; 7 NARS; 6 international institutes; and 8 CGIAR Centers).



SIIL: Quantifying Progress / Measuring Impact

- Measuring progress/ impact at multiple domains is critical due to nature of SI.
- Indicators and metrics at appropriate scale for each domain is critical.
- Baselines are needed for comparison, attribution and quantifying impact.
- Activities should contribute to Feed the Future goals and targets.
- Shows value of our work to donors (return for investment).
- Guides and supports USAID and host-country strategic planning on SI.
- Strengthens implementation of SIIL activities and sets for renewal and planning towards next phase.



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